AMENDMENTS

Please amend the claims as follows:

1. (currently amended) A medical diagnostic ultrasound system subsystem having ~~its~~ an essential data processing functionality, the essential data processing functionality including data processing of ultrasound data, the essential data processing functionality of the subsystem largely residing in at least one but less than three reprogrammable logic device components.

2. (original) The diagnostic ultrasound system subsystem of claim 1, wherein the essential functionality mostly resides in reprogrammable logic device components.

3. (original) The diagnostic ultrasound system subsystem of claim 1, wherein the essential functionality substantially resides in reprogrammable logic device components.

4. (original) The diagnostic ultrasound system subsystem of claim 1, wherein the essential functionality about entirely resides in reprogrammable logic device components.

5. (original) The diagnostic ultrasound system subsystem of claims 1, 2, 3, or 4, wherein the subsystem is a scan converter.

6. (original) The diagnostic ultrasound system subsystem of claims 1, 2, 3, or 4, wherein the subsystem is a transmit beamformer.

7. (original) The diagnostic ultrasound system subsystem of claims 1, 2, 3, or 4, wherein the subsystem is a receive beamformer.

8. (original) The diagnostic ultrasound system subsystem of claims 1, 2, 3, or 4, wherein at least two subsystems comprise re-programmable logic devices.

9. (original) The diagnostic ultrasound system subsystem of claim 8 wherein the at least two subsystems comprise a transmit beamformer, a receive beamformer, and a scan converter.

10. (original) The diagnostic ultrasound system subsystem of claims 1, 2, 3, 4, 5, 6, 7, 8 or 9, wherein the diagnostic ultrasound system is portable.

11. (currently amended) A medical diagnostic ultrasound method for processing with a subsystem, the method comprising the acts of:

(a) processing ultrasound data as an essential data processing functionality of the subsystem, the processing performed by ~~with~~ at least one but less than three re-programmable logic device in the subsystem; and

(b) providing ~~an~~ the essential data processing functionality of the subsystem largely resident in the reprogrammable logic device components.

12. (original) The method of claim 11, wherein (b) comprises providing the essential functionality mostly resident in reprogrammable logic device components.

13. (original) The method of claim 11, wherein (b) comprises providing the essential functionality substantially resident in reprogrammable logic device components.

14. (original) The method of claim 11, wherein (b) comprises providing the essential functionality about entirely resident in reprogrammable logic device components.

15. (original) The method of claims 11, 12, 13, or 14, wherein (a) comprises scan converting data.

16. (original) The method of claims 11, 12, 13, or 14, wherein (a) comprises generating digital transmit waveforms.

17. (original) The method of claims 11, 12, 13, or 14, wherein (a) comprises delaying and summing.

18. (original) The method of claims 11, 12, 13, or 14, further comprising:

(c) performing (a) and (b) in at least two subsystems in an ultrasound data path of an ultrasound system.

19. (original) The method of claims 11, 12, 13 or 14 further comprising:

(c) re-programming the re-programmable logic device in response to a change in mode.

20. (original) The subsystem of Claims 1, 2, 3 or 4 wherein the re-programmable logic device comprises a field programmable gate array.

21. (currently amended) A medical diagnostic ultrasound system for beamformation, the system comprising:

a beamformer comprising at least one re-programmable logic device operable to generate transmit waveforms, delay ultrasound data or waveforms, apodize across channels or sum ultrasound data; and

a transducer operatively connected with the beamformer.

22. (original) The system of Claim 21 wherein the beamformer comprises a transmit beamformer.

23. (original) The system of Claim 21 wherein the beamformer comprises a receive beamformer.

24. (original) The system of Claim 21 wherein the re-programmable logic device comprises a field programmable gate array.

25. (original) The system of Claim 21 wherein an essential functionality of the beamformer resides in the re-programmable logic device.

26. (original) A medical diagnostic ultrasound method for beamformation, the method comprising the steps of:

(a) beamforming data with at least one re-programmable logic device; and

(b) transmitting data between the re-programmable logic device and a transducer.

27. (original) The method of Claim 26 wherein (a) comprises generating digital transmit waveforms with the re-programmable logic device.

28. (original) The method of Claim 26 wherein (a) comprises delaying and summing.

29. (original) The method of Claim 26 wherein (a) comprises processing with a field programmable gate array.

30. (original) The method of Claim 26 further comprising:

(c) providing an essential functionality of the beamformer resident in the re-programmable logic device.

31. (currently amended) A medical diagnostic ultrasound system for scan conversion, the system comprising:

a scan converter comprising at least one but less than three re-programmable logic device, the at least one but less than three re-programmable logic devices operable to convert ultrasound data from one format to another format; and

a display operatively connected with the scan converter.

32. (original) The system of Claim 31 wherein the re-programmable logic device comprises a field programmable gate array.

33. (original) The system of Claim 31 wherein an essential functionality of the scan converter resides in the re-programmable logic device.

34. (currently amended) A medical diagnostic ultrasound method for scan conversion, the method comprising the steps of:

(a) scan converting ultrasound data from one format to another format with at least one but less than three re-programmable logic devices; and

(b) transmitting data from the re-programmable logic device to a display.

35. (original) The method of Claim 34 wherein (a) comprises scan converting with a field programmable gate array.

36. (original) The method of Claim 34 further comprising:

(c) providing an essential functionality of the scan converter resident in the re-programmable logic device.

37-45. (cancelled)

46. (original) The system of Claim 23 wherein the one programmable logic device comprises a memory operable to delay received signals.

47. (original) The system of Claim 28 wherein (a) comprises delaying received signals with a memory integrated with the one programmable logic device.

48. (original) The system of Claims 1, 2, 3, or 4 further comprising an array of at least 64 elements.

49. (original) The system of Claims 1, 2, 3 or 4 further comprising an array from the group consisting of: linear, curved linear, phased linear, sector and wide view array operatively connected with the system.

50. (cancelled)

51. (currently amended) The system of Claim 1 ~~Claims 1, 2, 3, or 4~~ wherein the re-programmable logic device components comprise a single re-programmable logic device in the subsystem.

52. (original) The method of Claims 11, 12, 13, or 14 further comprising:

(c) acquiring the data with an array of at least 64 elements.

53. (original) The method of Claims 11, 12, 13 or 14 further comprising:

(c) acquiring the data with an array from the group consisting of: linear, curved linear, phased linear, sector and wide view arrays.

54. (cancelled)

55. (currently amended) The method of Claim 11 ~~Claims 11, 12, 13, or 14~~ wherein (b) comprises providing the essential functionality wherein the re-programmable logic device components comprise a single re-programmable logic device in the subsystem.

56. (original) The system of Claim 21 wherein the transducer comprises an array of at least 64 elements.

57. (original) The system of Claim 21 wherein the transducer comprises an array from the group consisting of: linear, curved linear, phased linear, sector and wide view arrays.

58. (cancelled)

59. (original) The system of Claim 21 wherein the at least one re-programmable logic device comprises a single re-programmable logic device.

60. (original) The method of Claim 26 further comprising:

(c) transmitting acoustic energy wherein the transducer comprises an array of at least 64 elements.

61. (original) The method of Claim 26 wherein (b) comprises transmitting data for the transducer comprising an array from the group consisting of: linear, curved linear, phased linear, sector and wide view arrays.

62. (cancelled)

63. (original) The method of Claim 26 wherein (a) comprises beamforming wherein the at least one re-programmable logic device comprises a single re-programmable logic device.

64. (cancelled)

65. (original) The system of Claim 31 wherein the at least one re-programmable logic device comprises a single re-programmable logic device.

66. (cancelled)

67. (original) The method of Claim 34 wherein (a) comprises scan converting wherein the at least one re-programmable logic device comprises a single re-programmable logic device.

68–77. (cancelled)